

REMARKS

Claims 1-9 are all the claims pending in the application.

The disclosure is objected to because of various informalities.

Claims 1-9 are objected to because of various informalities.

Claims 6-8 are objected to because of various informalities.

Claims 1-5 and 9 are rejected under 35 U.S.C. 102(a)(e) as being anticipated by Kozaki.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozaki in view of Matsubara et al. (U.S. Patent No. 5,598,077).

The Applicants traverse the rejections and request reconsideration.

Detailed Comments

Objections to the Specification and Claims

The Examiner objects to the Specification and Claims because the manner in which vibration is detected by the vibration detecting member is allegedly not disclosed. The Applicants respectfully submit that, any conventional technique for detecting vibrations by a vibration detecting member could be used. The claimed invention is not limited to any specific way of detecting the vibrations.

Further, the claims cover any such technique for detecting vibrations. For example, in the block diagram shown in Fig. 1, any vibration detection circuit could be used to implement

item 1. It is accepted that what is known by common knowledge to a skilled artisan need not be disclosed explicitly in the Specification.

Regarding the other objections to claims 6-9, the Amendments should overcome the objections thereto.

Claim Rejections under 35 U.S.C. § 102

Rejection of claims 1-5 and 9 based on Kozaki

The present invention (as recited in claim 1) is a gain adjusting method that is required to increase a speed loop gain to detect vibration at each of a plurality of points over a movable range of a machine. The speed loop gain is decreased to detect the gain when the vibration becomes still as a maximum value. The set gain value corresponding to a machine is provided.

On the other hand, in Kozaki (U.S. Publication No. 2003/0029240) if there is vibration in an electric-current command during driving, a filter setting value or a gain setting value is changed at a command speed. However, the vibration is higher than the preliminary reference value. Moreover, the vibration has the natural frequency. Further, the vibration is not specifically described. The Applicants respectfully submit that the vibration is preliminarily set.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP 2131 *citing Verdegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Kozaki does not anticipate the present invention as recited in claim 1, at least because of the above noted differences between the present invention and Kozaki.

Claims 3 and 9 include limitations analogous to the ones described above. Therefore, they are allowable for analogous reasons.

Claims 2, 4 and 5 are dependent on claims 1 and 3 respectively. Therefore, they are allowable at least for the same reasons.

Claim Rejections under 35 U.S.C. § 103

Rejection of claims 6-8 based on Kozaki in view of Matsubara

Claim 6 includes limitations analogous to the ones described above in relation to claim 1. Therefore, the arguments discussed above are analogously valid. Moreover, Matsubara does not overcome the deficiencies noted in the teachings of Kozaki.

In Matsubara (U.S. Patent No. 5,598,077), the value in a speed loop integrator is divided into a frictional torque component and an acceleration torque component to correct a backlash acceleration. It is not related to a gain adjustment.

To the contrary, in the present invention, since a speed loop gain is adjusted over a movable range of a machine, it is possible to perform a stable adjustment with a margin for vibration (a margin to account for a movement of machine) and to suppress changes according to the location of the machine.

Further, the vibration during stoppage as well as the noise can be suppressed. Thus the controlled gain can be stabilized. The maximum gain can be acquired by surely vibrating with a simulated disturbance torque suited to a machine, and vibration can be reduced by decreasing a gain immediately after vibration.

Using the present invention, it is possible to prevent a large increase in gain. Thus, the danger due to the vibration is prevented, and the optimal control method can be automatically selected and adjusted.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2142 citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Applicants respectfully submit that the Patent Office has not satisfied the burden of establishing *prima facie* obviousness at least because it has not satisfied at least the “all limitations” prong of the three prong test for obviousness. Specifically, the Patent Office has not shown that the combined teachings of Kozaki and Matsubara suggest the present invention including the features discussed above. Since the “all limitations” prong of the test for obviousness is not met, the “motivation” prong must also fail.

Claims 7 and 8 are dependent on claim 6 and are allowable for the same reasons.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No.: 10/520,731

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Respectfully submitted,

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